

**AMENDMENTS TO THE CLAIMS:**

The listing of claims will replace all prior versions, and listings, of claims in the application:

**Listing of Claims:**

1-8. (cancelled)

9. (new) A method for monitoring an exhaust system of a motor vehicle having an internal combustion engine (1) and having monitoring electronics (7), a temperature sensor (6) for measuring an outlet-side exhaust-gas temperature (T2) being arranged at the outlet side (14) of an exhaust pipe section (15) which is intended to accommodate a component (4) with a purifying activity, and the monitoring electronics (7) compare a time curve of the outlet-side exhaust-gas temperature (T2) with a time curve of an inlet-side exhaust-gas temperature (T1) at the inlet side (13) of the exhaust pipe section (15), wherein the comparison comprises forming a time derivative.

10. (new) The method as claimed in claim 9, wherein the monitoring electronics (7) determine the time derivatives ( $dT1/dt$ ) and ( $dT2/dt$ ) of the inlet-side exhaust-gas temperature (T1) and the outlet-side exhaust-gas temperature (T2), and the difference ( $dT1/dt - dT2/dt$ ) between the derivatives.

11. (new) The method as claimed in claim 10, wherein the monitoring electronics (7) generate a signal which indicates the absence of the component (4) with a purifying activity or the presence of an incorrect component if the difference ( $dT1/dt - dT2/dt$ ) between the derivatives is within a predetermined range of values.

12. (new) The method as claimed in claim 10, wherein the monitoring electronics (7) generate a signal which indicates the absence of the component (4) with a purifying activity or the presence of an incorrect component if the

difference ( $dT_1/dt - dT_2/dt$ ) between the derivatives is within a predetermined range of values and the time derivative ( $dT_1/dt$ ) of the inlet-side exhaust-gas temperature ( $T_1$ ) is outside a predetermined range of values.

13. (new) The method as claimed in claim 9, wherein the monitoring electronics (7) determine the time derivatives ( $dT_1/dt$ ) and ( $dT_2/dt$ ) of the inlet-side exhaust-gas temperature ( $T_1$ ) and the outlet-side exhaust-gas temperature ( $T_2$ ), and also the time derivative ( $dT_2^*/dt$ ) of a calculated value ( $T_2^*$ ) for the exhaust-gas temperature at the outlet side (14) of the exhaust pipe section (15) and generate a signal which indicates the absence of the component (4) with a purifying activity or the presence of an incorrect component if the difference ( $dT_2^*/dt - dT_2/dt$ ) between the derivatives is outside a predetermined range of values and the time derivative ( $dT_1/dt$ ) of the inlet-side exhaust-gas temperature ( $T_1$ ) is outside a predetermined range of values.

14. (new) A method for monitoring an exhaust system of a motor vehicle having an internal combustion engine (1) and having monitoring electronics (7), a temperature sensor (6) for measuring an outlet-side exhaust-gas temperature ( $T_2$ ) being arranged at the outlet side (14) of an exhaust pipe section (15) which is intended to accommodate a component (4) with a purifying activity, and the monitoring electronics (7) compare a time curve of the outlet-side exhaust-gas temperature ( $T_2$ ) with a time curve of a calculated value ( $T_2^*$ ) for the exhaust-gas temperature at the outlet side (14) of the exhaust pipe section (15), wherein the calculated value ( $T_2^*$ ) is determined on the basis of the heat-storing and/or fluid-dynamic action of the component (4) with a purifying activity.

15. (new) The method as claimed in claim 14, wherein the monitoring electronics (7) determine the time derivatives ( $dT_2/dt$ ) and ( $dT_2^*/dt$ ) of the outlet-side exhaust-gas temperature ( $T_2$ ) and of the calculated temperature ( $T_2^*$ ) and the difference ( $dT_2^*/dt - dT_2/dt$ ) between the derivatives.

16. (new) The method as claimed in claim 15, wherein the monitoring electronics (7) generate a signal which indicates the absence of the component (4) with a purifying activity or the presence of an incorrect component if the difference ( $dT2^*/dt - dT2/dt$ ) between the derivatives is outside a predetermined range of values.

17. (new) The method as claimed in claim 14, wherein the monitoring electronics (7) determine the time derivative ( $dT1/dt$ ) of an inlet-side exhaust-gas temperature ( $T1$ ) at the inlet side (13) of the exhaust pipe section (15) and the time derivative ( $dT2/dt$ ) of the outlet-side exhaust-gas temperature ( $T2$ ), as well as the time derivative ( $dT2^*/dt$ ) of the calculated value ( $T2^*$ ) for the exhaust-gas temperature at the outlet side (14) of the exhaust pipe section (15) and generate a signal which indicates the absence of the component (4) with a purifying activity or the presence of an incorrect component if the difference ( $dT2^*/dt - dT2/dt$ ) between the derivatives is outside a predetermined range of values and the time derivative ( $dT1/dt$ ) of the inlet-side exhaust-gas temperature ( $T1$ ) is outside a predetermined range of values.